



Hemp plants growing in a field.

Hemp stalks waiting to be harvested.

WHILE the Phoenicians were laying the foundations of the pyramids, the inhabitants of Europe were wearing robes garments made from a common fiber plant. Today the same fiber weaves our doses and rigs our ships. It was the plant from whose resinous gums the Greeks obtained the intoxicating drug hashish even as the Indians do today.

Hemp is credited by Boyce, writing two decades ago, with saving that "the plant was burned and used for paper bats," while Herodotus says, "The Scythians were invigorated by inhaling the fumes of the burning weed." In Sardis it was termed *omos*, meaning a hollow root-like plant or cane. Persians named it *canes* and *kanay*, the Greeks gave it the appellation *kanava*—a root and anything made from it; but we Englishmen by introducing a number of variations have come to call it *hemp*.

Hemp today is grown in Europe, Asia and America and its fibers are used not only to make fine lace threads which rival silk, but to constitute the strong ropes and yarns used on shipboard. The great tensile strength and resilience to water and wear make hemp a great favorite with the sailors who use as much cordage of all kinds. The hemp family like all others has numerous branches each one serving its purpose, and while the Japanese grow hemp for fiber, we are raising it for the fiber which is employed in sewing garments and shoes, for making sacks and sewing the housewife's bosom as well as for the fine and coarse weaving twine. In the Navy it serves for sail thread, marlines, hawsers and for serving or covering steel ropes and cables to prevent the disintegrating action of the salt water. The furniture makers wrap springs with hemp to insure upholstery against rust and to the wool in place in mattresses with hemp thread.

Hemp grows from the equator to the latitude of 60 degrees and no other fiber plant is so adapted to the wide soil and climatic conditions and the rude arts of the semi-barbaric husbandman, yet none is more responsive to culture or better rewards the skill of the weaver and spinner. Lace threads are spun from hemp by hand to the fineness of 500 miles for each two and one-half pounds of fiber while cotton and wool yield only 350 miles for the same amount of fiber. This alone would make hemp popular but no machinery has yet been invented which can compete with hand spinning at a reasonable cost.

Perhaps because of the persistency with which it has been studied and cultivated for thousands of years, hemp is still used for making fine threads and cloth although its usefulness for making carriage, wines and fish-lines has not been neglected. Introduced into America in 1629 it had obtained a strong start, but the invention of the cotton gin in 1792 made cotton growing so much more profitable that except for Kentucky hemp was almost exterminated. The invention which made one industry delayed the growth of another for a century. Costly hand labor made hemp growing impossible and twenty years ago only a few thousand acres were grown in the entire United States.

Then something happened. A scarcity of sisal fiber in Yucatan threatened a twine shortage

in the country and urged by this necessity a few earnest workers began the promotion of an almost-dead culture.

Previous to 1911 no plant received less attention from inventors. The industry still lives in the blue-grass region of Kentucky in all the pristine glory and primitive practices of its establishment a hundred years ago," wrote Boyce, reviewing hemp in 1900.

But to understand the difficulties let us examine more closely the plant itself. Grown for fiber the stalks reach a height of from eight to ten feet in 80 days. Farmers unfamiliar with the crop and driving through the new hemp region of Wisconsin often amuse the residents by mistaking it for *cogon*. A hemp field gives forth a half-timer, half-unpleasant odor and the finely cut leaves do indeed resemble the roadside weed. The root-like stalks are colored a yellowish green and except for the top leaves are smooth and glossy. Just beneath the greenish outer coat, however, and buried in the gummy matter of the bark lie the strong fine fibers and it is in removing them from the wood part of the stem that the difficulty is encountered.

European and even the old Kentucky cultivators used to soak the stalks in specially constructed ponds or tanks after they had laboriously cut their crop with hand sickles. The water soon decayed the gums and then when the hemp was dried it was possible to separate the fibers from the partly rotted stalks. Now the fiber crop is spread on the ground and allowed to undergo the action of rain, sunshine and dew until the rotted or "refined" is completed. Less labor is required although some of the quality is lost.

After drying in the old days the hemp was taken to the "brake" where a man worked hard and long all day to take a hundred pounds of fiber or in other words to separate the fiber itself from the stem or "hurds." Machinery in the new hemp mills of Wisconsin does the same work easier and cleaner at the rate of one thousand pounds an hour or one hundred pounds in six minutes.

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possibilities he realized that unless machinery could remove the hand labor nothing could be accomplished. Large machinery companies who were leading the tool shortage and even individuals responded to the call for harvesting machinery and with interest around the plant breeder turned over the work to A. E. Wright, whose reputation has earned him the nickname of "The Hemp Man."

In September when harvest time comes, a machine cuts the tough stalks and even spreads them on the ground outside the track of the tractor. Five years ago the spreading was done by hand. A space of a month or six weeks elapses before the setting is completed and another machine gathers up the stalks and ties them in bundles. This is still done by hand in some instances but the large percentage of the crop is harvested by farmers with no more energy expended than is needed in an ordinary grain crop. The farmer's work is completed when he has hauled and stacked his crop at the mill.

In 1920 Wisconsin valued her hemp crop at not less than a million dollars and twenty-eight mills employing several hundred men from September until July breaking the crop and preparing it for the spinning mills.

The little mills out in the country villages are unique and interesting. From the stackyard, hemp is lit in a long oven nearly two hundred feet long where hot blasts of air properly dry the stalks. The new "brake" is a series of corrugated rollers and stalkers which separate the fibers and hurds much better than the old hand implement. A large revolving cylinder with many teeth combs out the hurds and leaves the hemp fibers in long silky masses ready to be haled and bound.

Everything inside the factory is covered with dirt and dust and in spite of the ventilating fans the mills are tremendously dirty. Not only do the fans whirr but they suck out the refuse of the brake and throw it into the fire under the boiler. Little coal is used, for the hurds burn like tinder and their presence about the factory makes it very necessary that the night watchman be ever on the alert for smoldering fires which suddenly break out in such dry that the factory is wiped clean before help can arrive. Fires are still rather frequent in spite of the fireproof mills now replacing the old wooden structures.

After watching the fire under the boiler in such a mill I made my way to the baling room. The foreman presented me with a handful of the fine silken strands and to test their strength I attempted to break a few twisted strands. After several vain attempts in which my hand suffered more than did the fiber I glanced at the man who was smiling keenly at my failure.

"Try to break a single fiber," he suggested.

But even that was too strong and I began to realize more fully why it was, rope made from such fiber challenges the strength of steel.

The fiber crop of the ancients has at last found its place in the field of modern industry.



The crop spread out to dry.

From rough fiber to fine thread.